

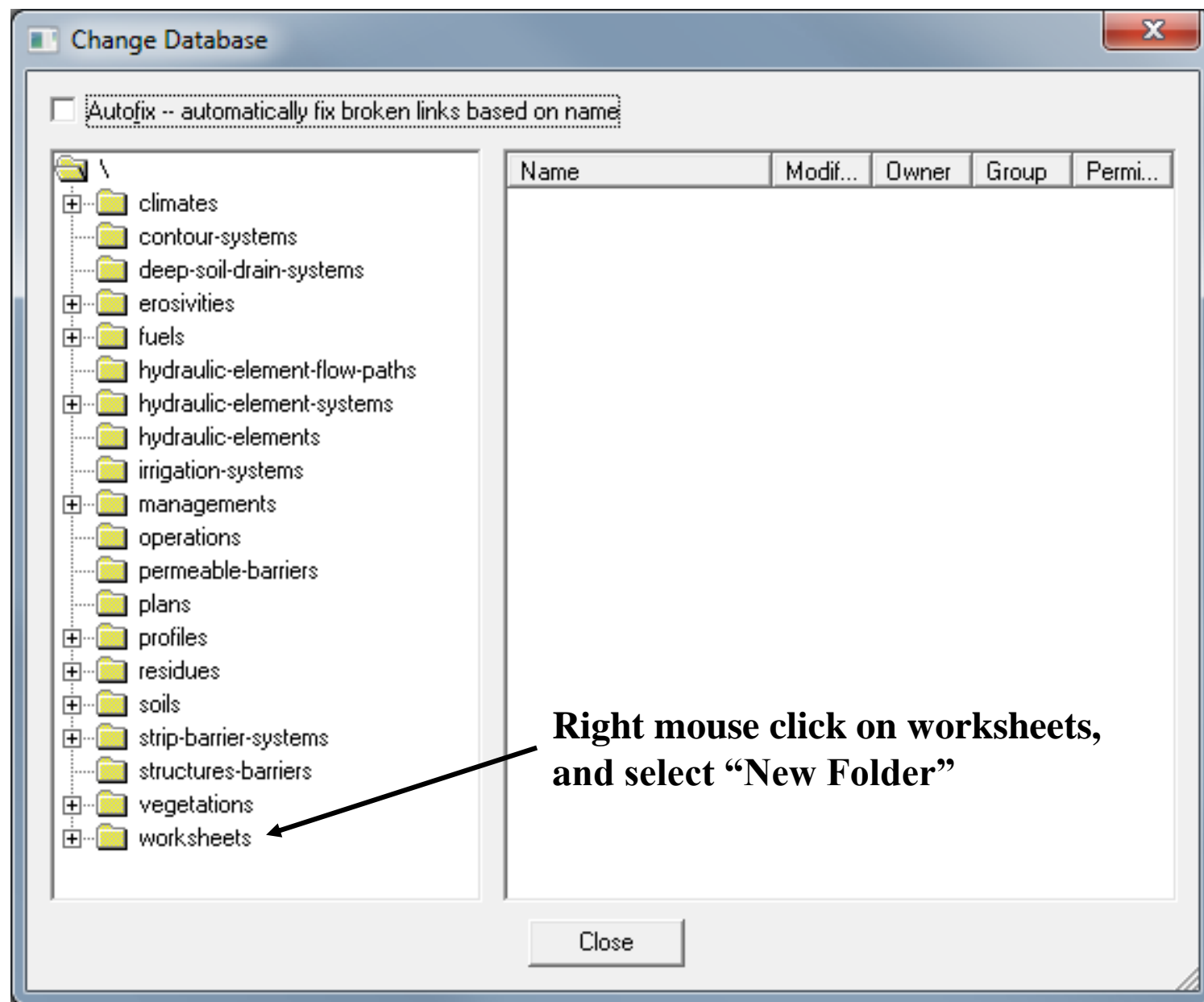
# RUSLE2 Worksheet Manual for the August 18, 2014 version (Version 2.5.2.11)

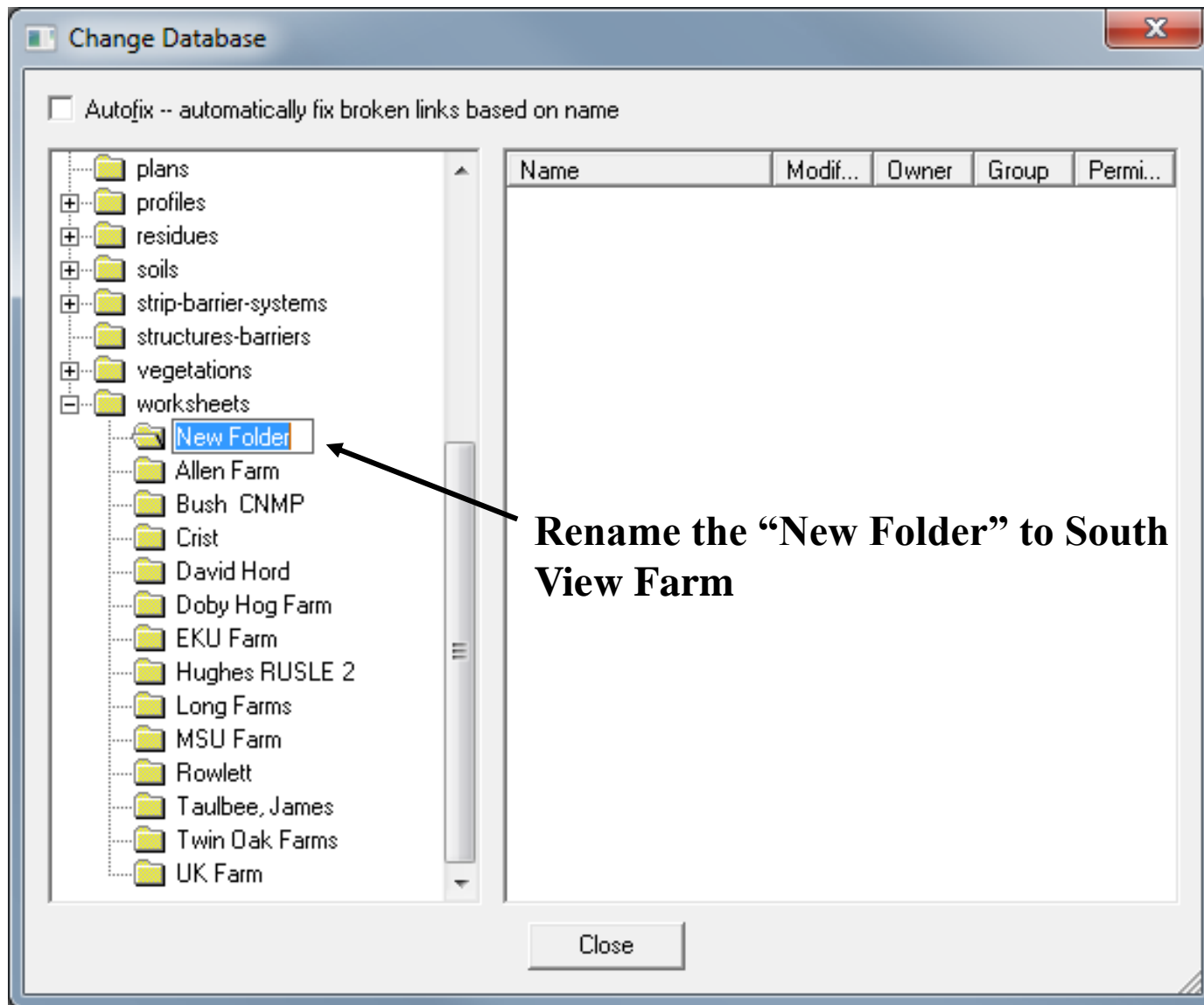


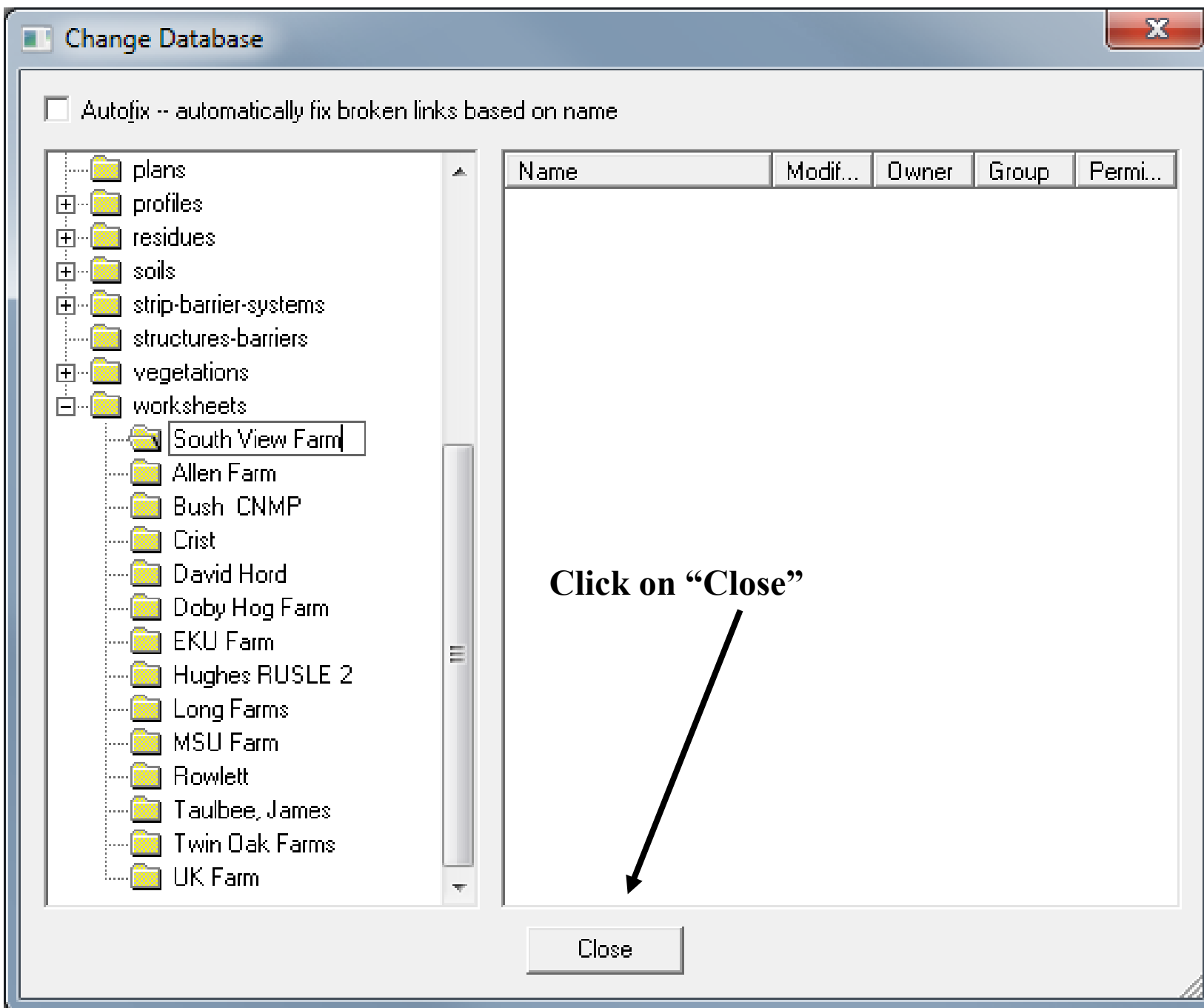


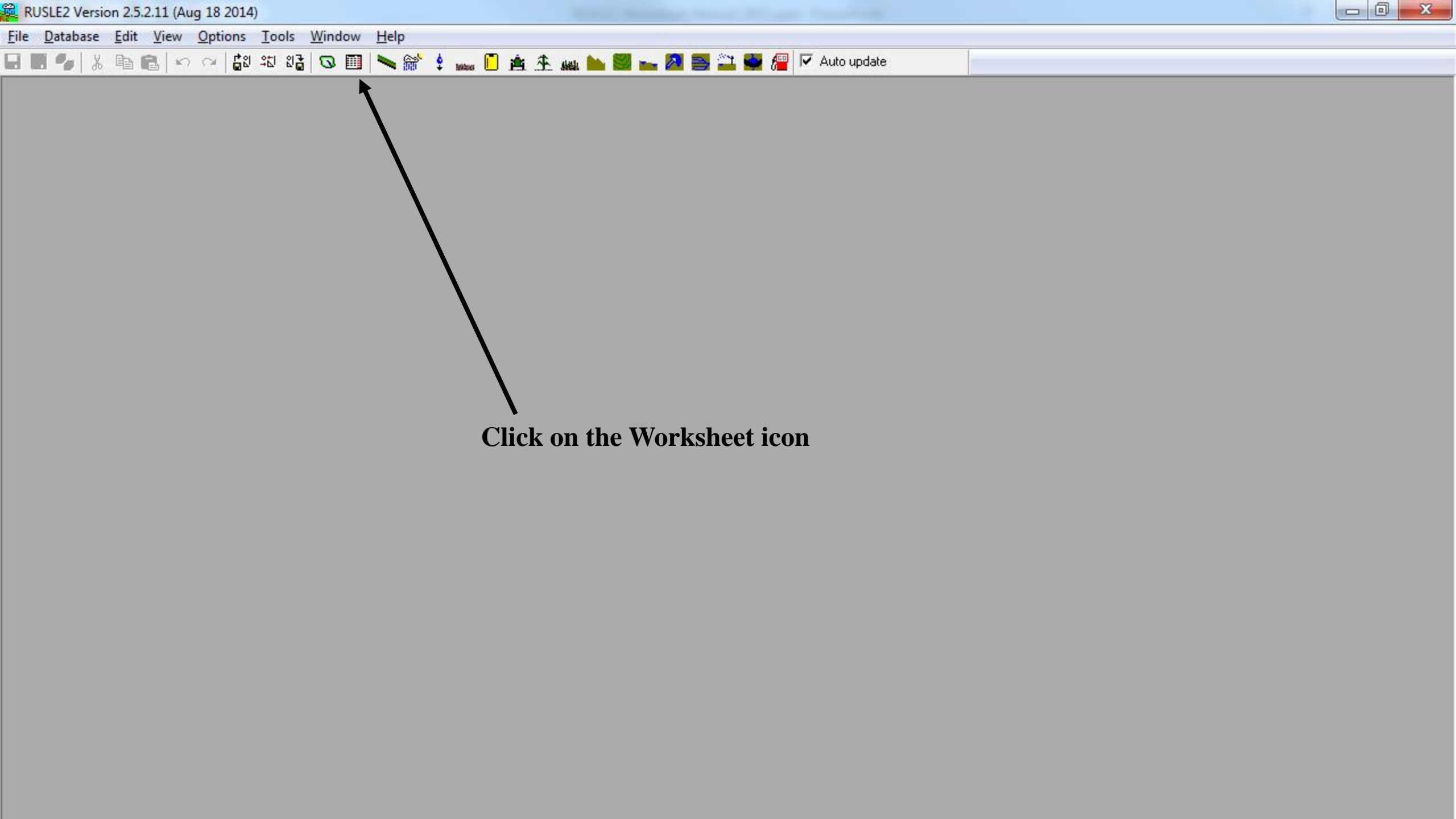
**First we need to create the customer folder where the farm/field specific soil loss prediction files will be saved.**

**Click on Database and select Rearrange...**

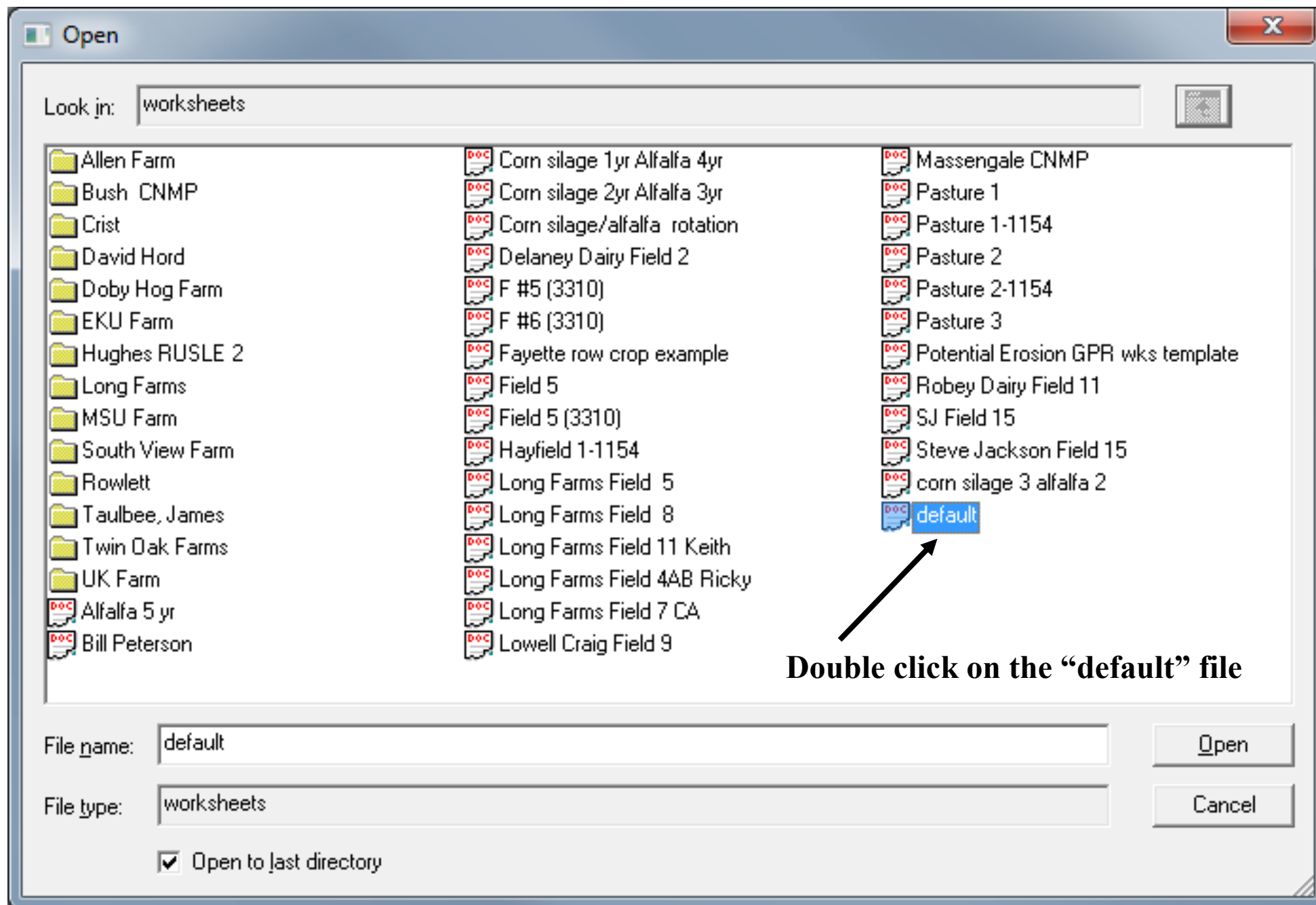










































































**Click on the Worksheet icon**



RUSLE2 Version 2.5.2.11 (Aug 18 2014)

FileDatabaseEditViewOptionsToolsWindowHelp



Auto update

Worksheet: default\*

Tract #  
Owner name  
Field name

3518  
South View Farm  
11

Info

The South edge of field 11 is in a 350 feet proximity of a residential home.  
Consider odor as a concern when planning manure applications.

Enter any field specific information into this box.

Compare management alternatives for a single hillslope profile

Location  
Soil

default  
Generic Soils\default

T value, t/ac/yr3.0

Slope length (along slope), ft  
Avg. slope steepness, %

150  
4.00

Slope Topography

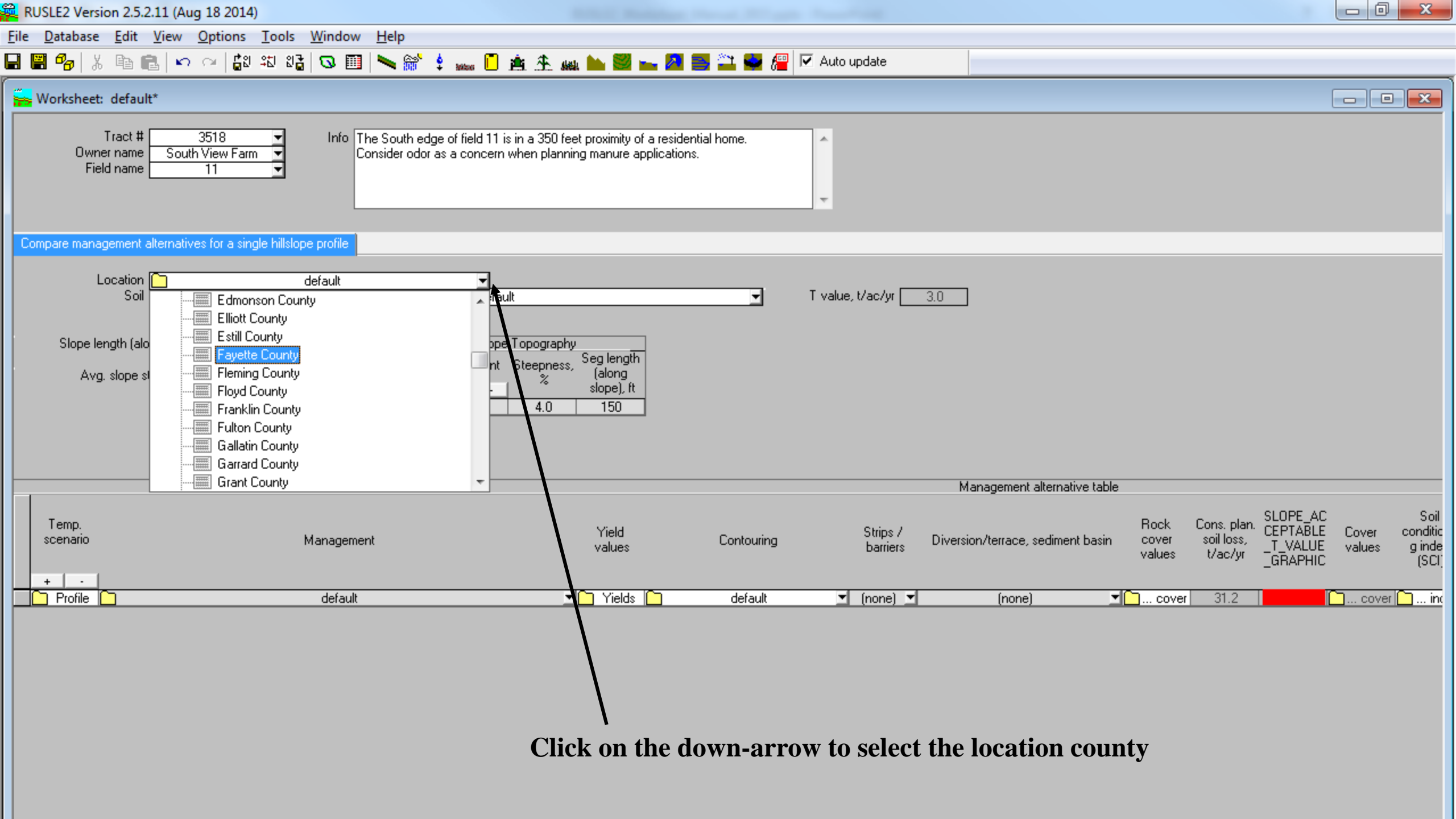
Segment	Steepness, %	Seg length (along slope), ft
1	4.0	150

Fill in the Tract number, Owner name and field number/name info boxes.

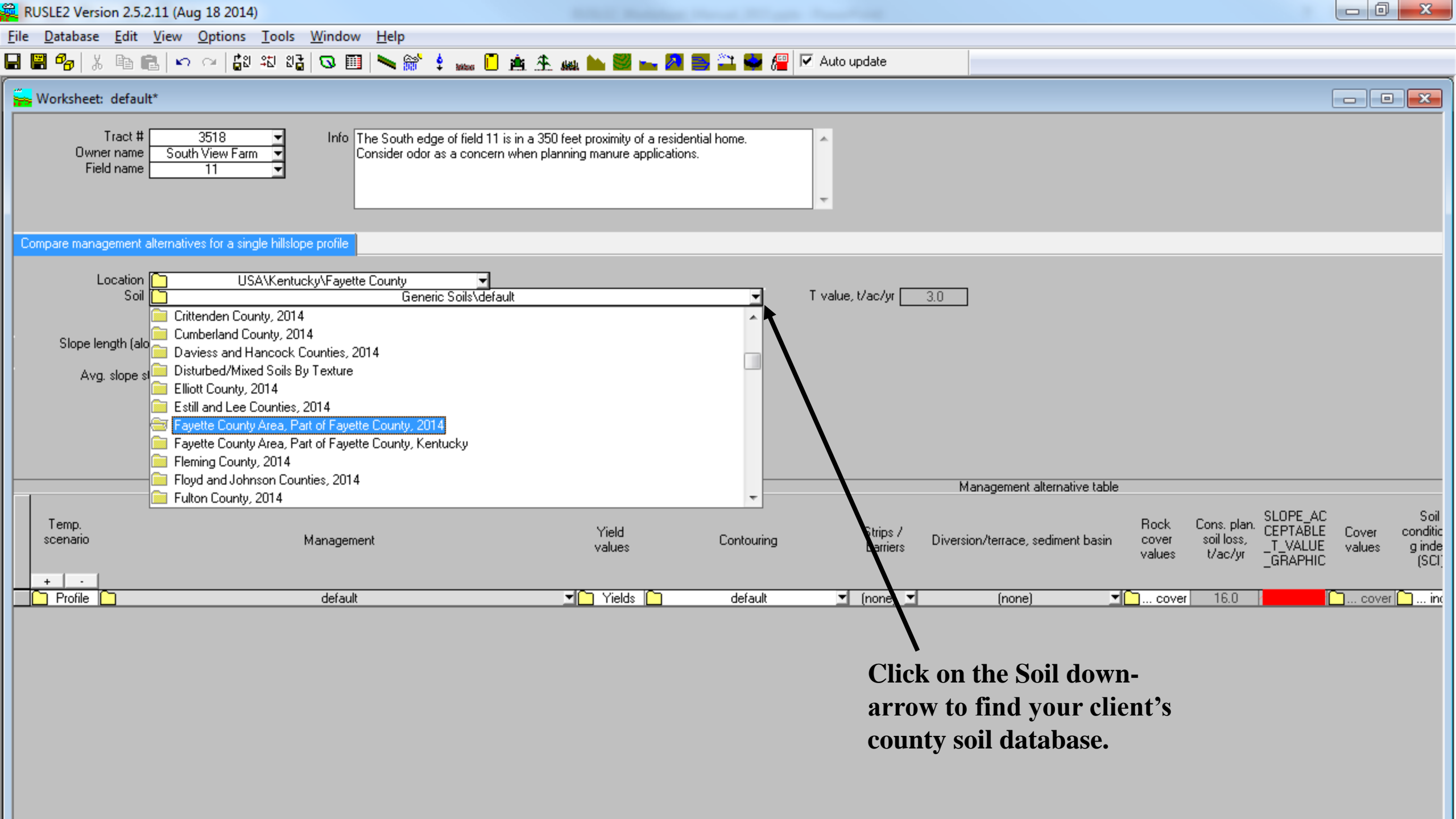
Management alternative table

Temp. scenario	Management	Yield values	Contouring	Strips / barriers	Diversion/terrace, sediment basin	Rock cover values	Cons. plan. soil loss, t/ac/yr	SLOPE_ACCEPTABLE_T_VALUE_GRAPHIC	Cover values	Soil conditioning index (SCI)
Profile	default	Yields	default	(none)	(none)	... cover	31.2		... cover	... inc

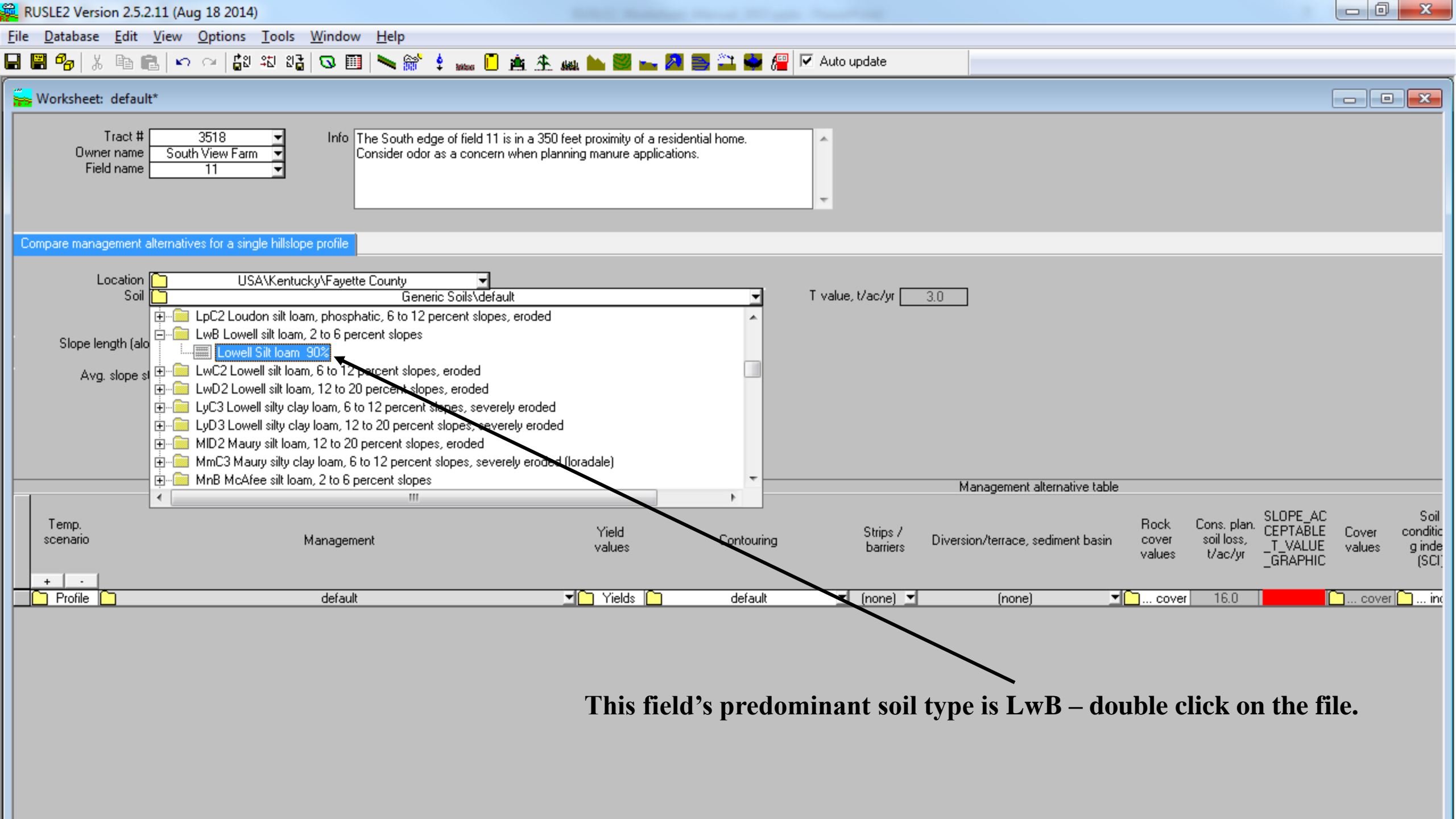




Click on the down-arrow to select the location county



Click on the Soil down-arrow to find your client's county soil database.



Info	The South edge of field 11 is in a 350 feet proximity of a residential home. Consider odor as a concern when planning manure applications.
------	--

T value, t/ac/yr 3.0

Avg. slope steepness, %	4.00
-------------------------	------

Slope Topography			Seg length (along slope), ft
Segment		Steepness, %	
+	-		
1		40	150

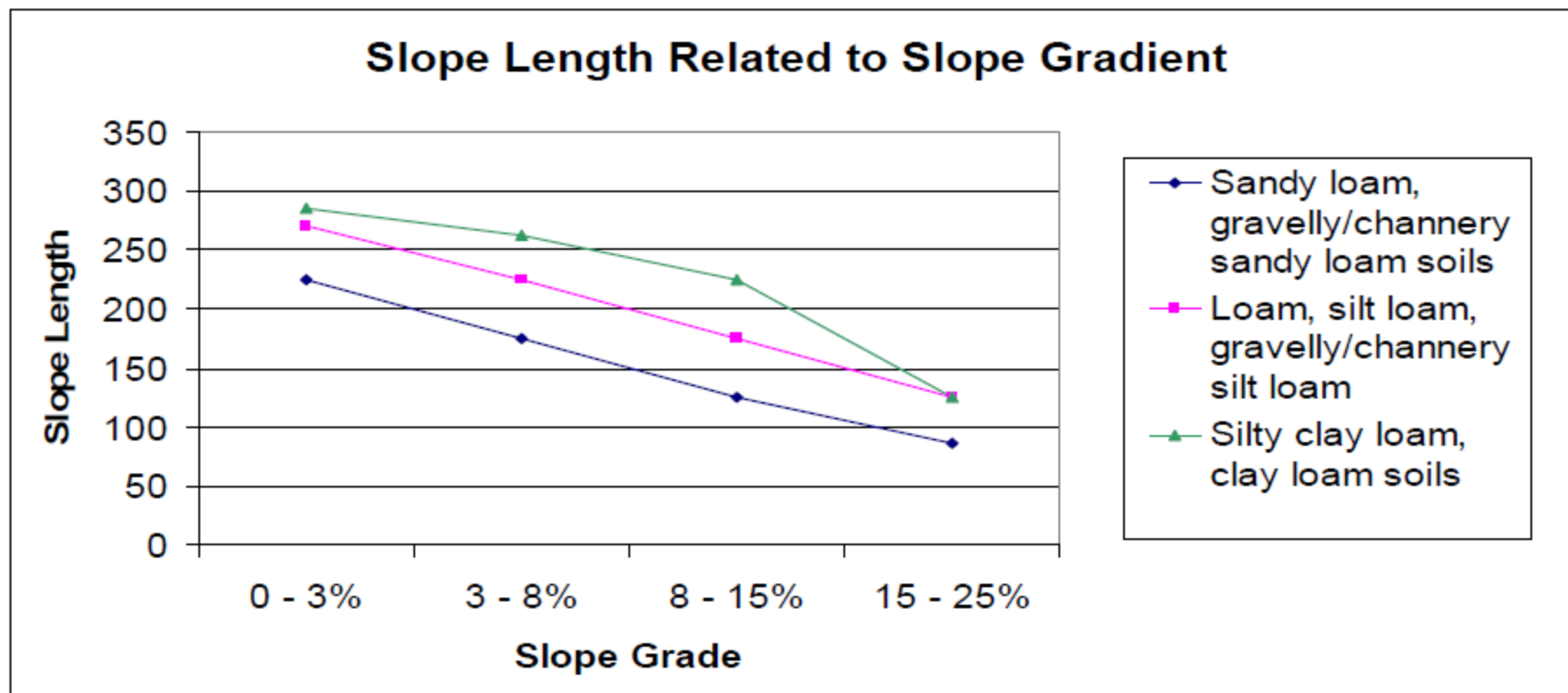
Management alternative table

Temp. scenario	Management	Yield values	Contouring	Strips / barriers	Diversion/terrace, sediment basin	Rock cover values	Cons. plan. soil loss, t/ac/yr	SLOPE_ACCEPTABLE_T_VALUE_GRAPHIC	Cover values	Soil condition index (SCI)
<div> <div>+</div> <div>-</div> </div> <div>Profile</div>	default	Yields	default	(none)	(none)	... cover	15.8		... cover	... inc

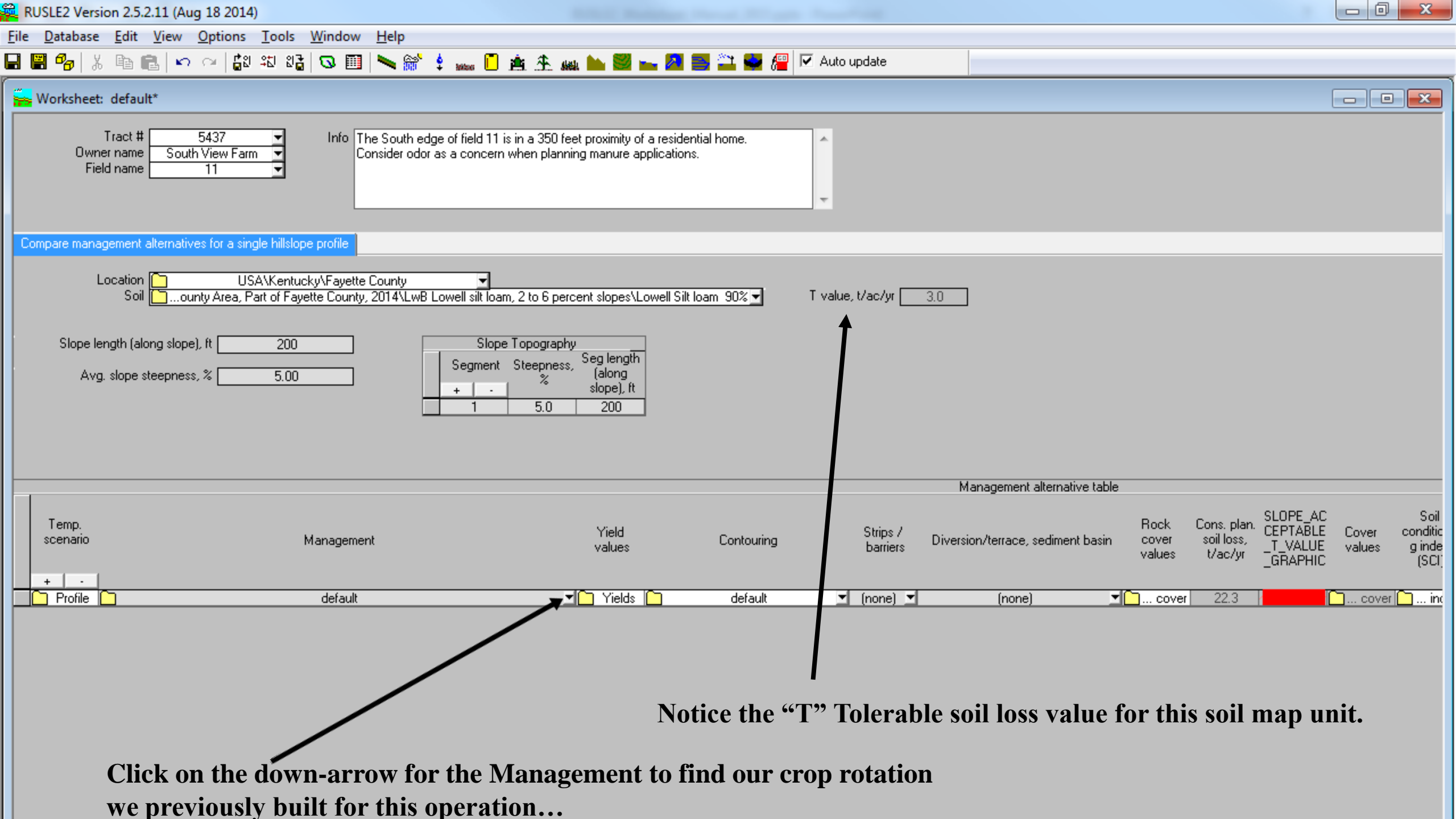
## Change the values as needed...

### Guidance for determining RUSLE2 slope length during the field visit

Texture of the Soil Surface	0 - 3%	3 - 8%	8 - 15%	15 - 25%
Sandy loam, gravelly/channery sandy loam soils	200 - 250'	150 - 200'	100 - 150'	75 - 100'
Loam, silt loam, gravelly/channery silt loam	250 - 300'	200 - 250'	150 - 200'	100 - 150'
Silty clay loam, clay loam soils	275 - 300	250 - 275'	200 - 250'	100 - 150'

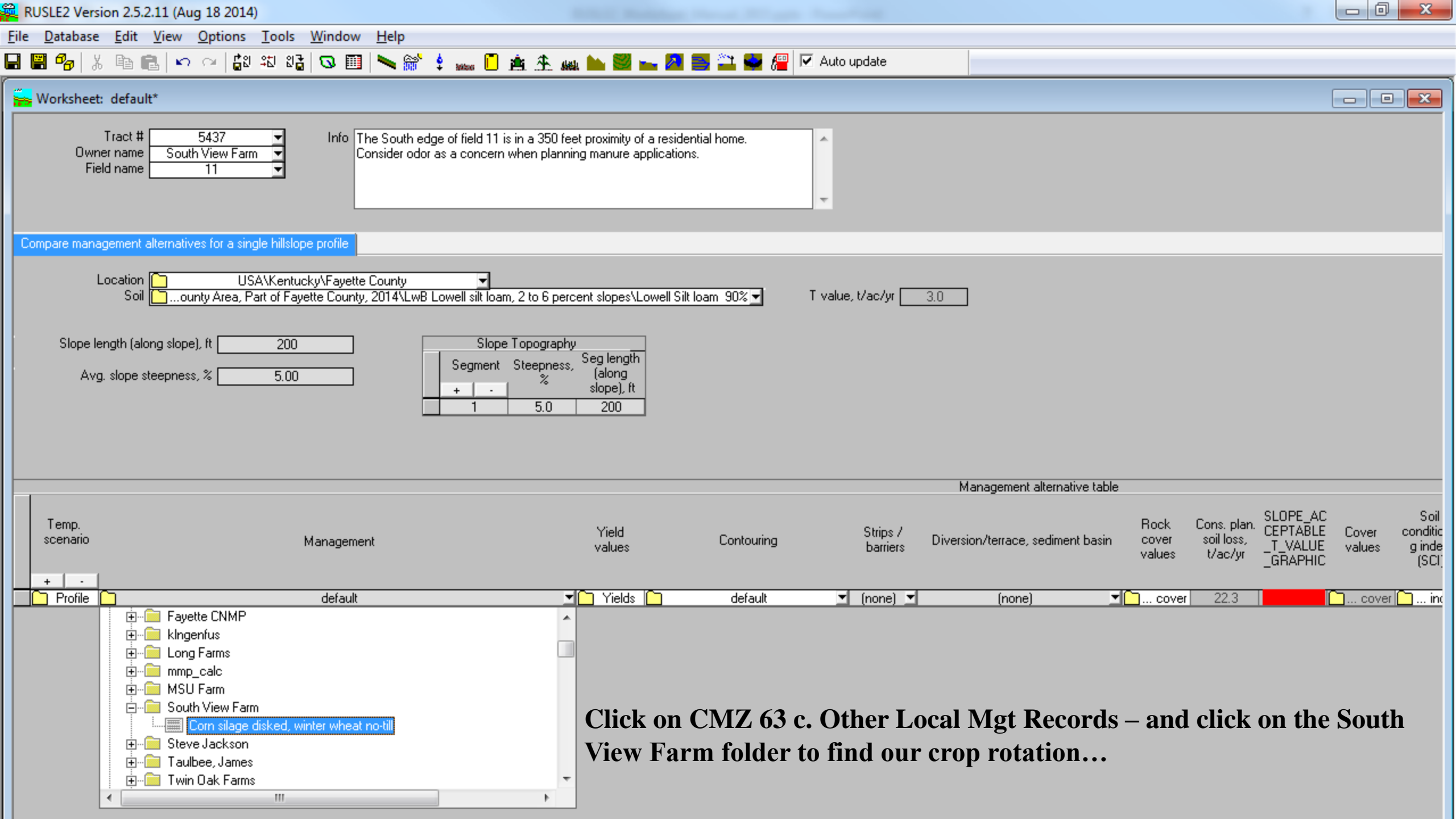




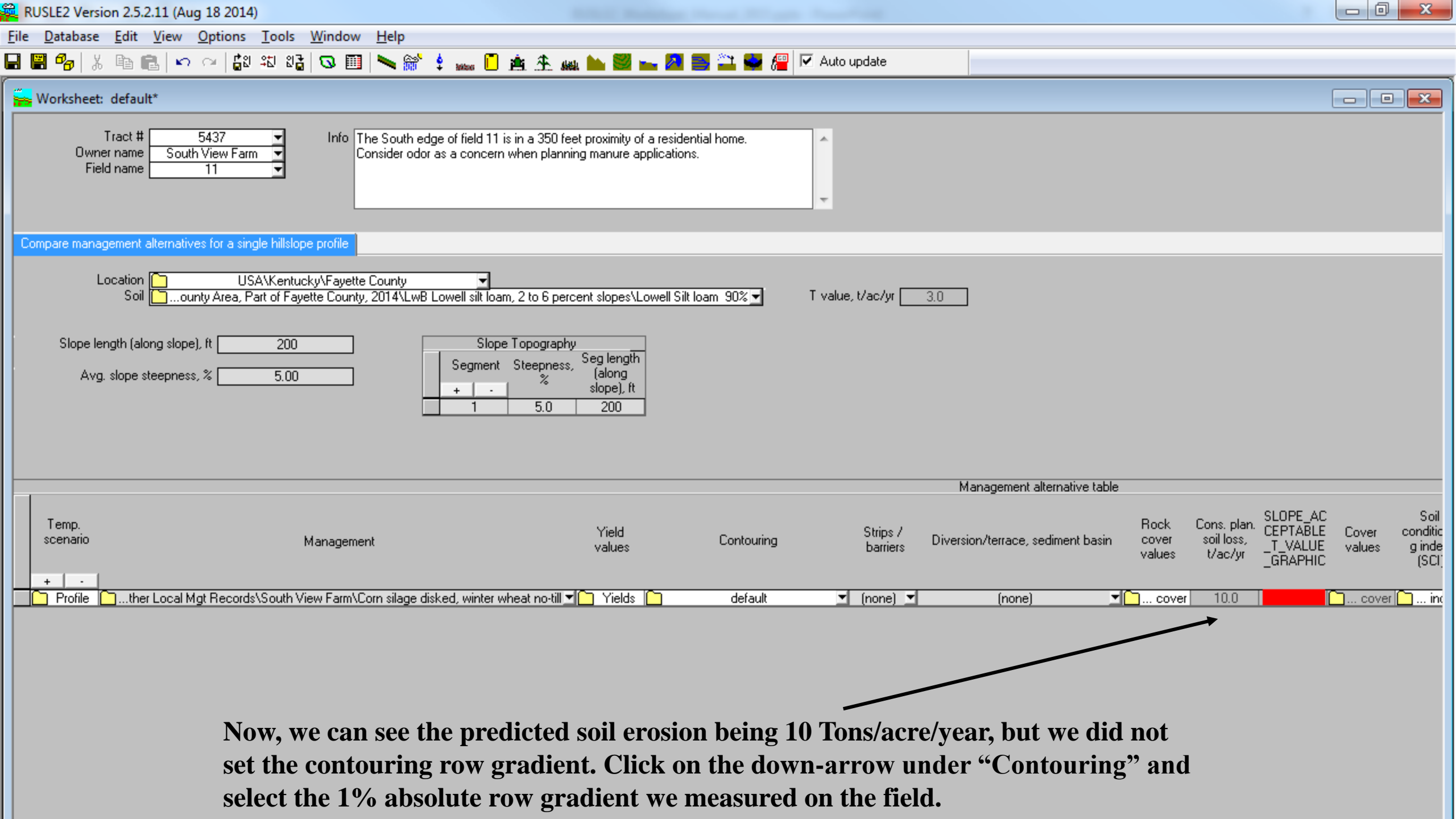


Click on the down-arrow for the Management to find our crop rotation we previously built for this operation...

Notice the “T” Tolerable soil loss value for this soil map unit.



Click on CMZ 63 c. Other Local Mgt Records – and click on the South View Farm folder to find our crop rotation...



Now, we can see the predicted soil erosion being 10 Tons/acre/year, but we did not set the contouring row gradient. Click on the down-arrow under “Contouring” and select the 1% absolute row gradient we measured on the field.

**Info** The South edge of field 11 is in a 350 feet proximity of a residential home. Consider odor as a concern when planning manure applications.

[illegible]

T value, t/ac/yr	3.0
------------------	-----

Avg. slope steepness, %	5.00
-------------------------	------

Slope Topography			Seg length (along slope), ft
Segment		Steepness, %	
+	-		
1		5.0	200

Temp. scenario	Management	Yield values	Contouring	Strips / barriers	Diversion/terrace, sediment basin	Rock cover values	Cons. plan, t/ac/yr	SLOPE_ACCEPTABLE_T_VALUE_GRAPHIC	Cover values	Soil condition index (SCI)
<div> <div>+</div> <div>-</div> </div>	<div>Profile</div>	<div>...ther Local Mgt Records\South View Farm\Corn silage disked, winter wheat no-till</div>	<div>Yields</div>	<div>...absolute row grade 1 percent</div>	<div>(none)</div>	<div>(none)</div>	<div>... cover</div>	<div>8.17</div>	<div>... cover</div>	<div>... inc</div>

**The soil loss is still 8.17 Tons/acre/year. This is the benchmark condition on this field and we need to find alternatives to bring the soil loss below the “T” tolerable level of 3 Tons/acre/year.**

Info	The South edge of field 11 is in a 350 feet proximity of a residential home. Consider odor as a concern when planning manure applications.
------	--

T value, t/ac/yr	3.0
------------------	-----

Avg. slope steepness, %	5.00
-------------------------	------

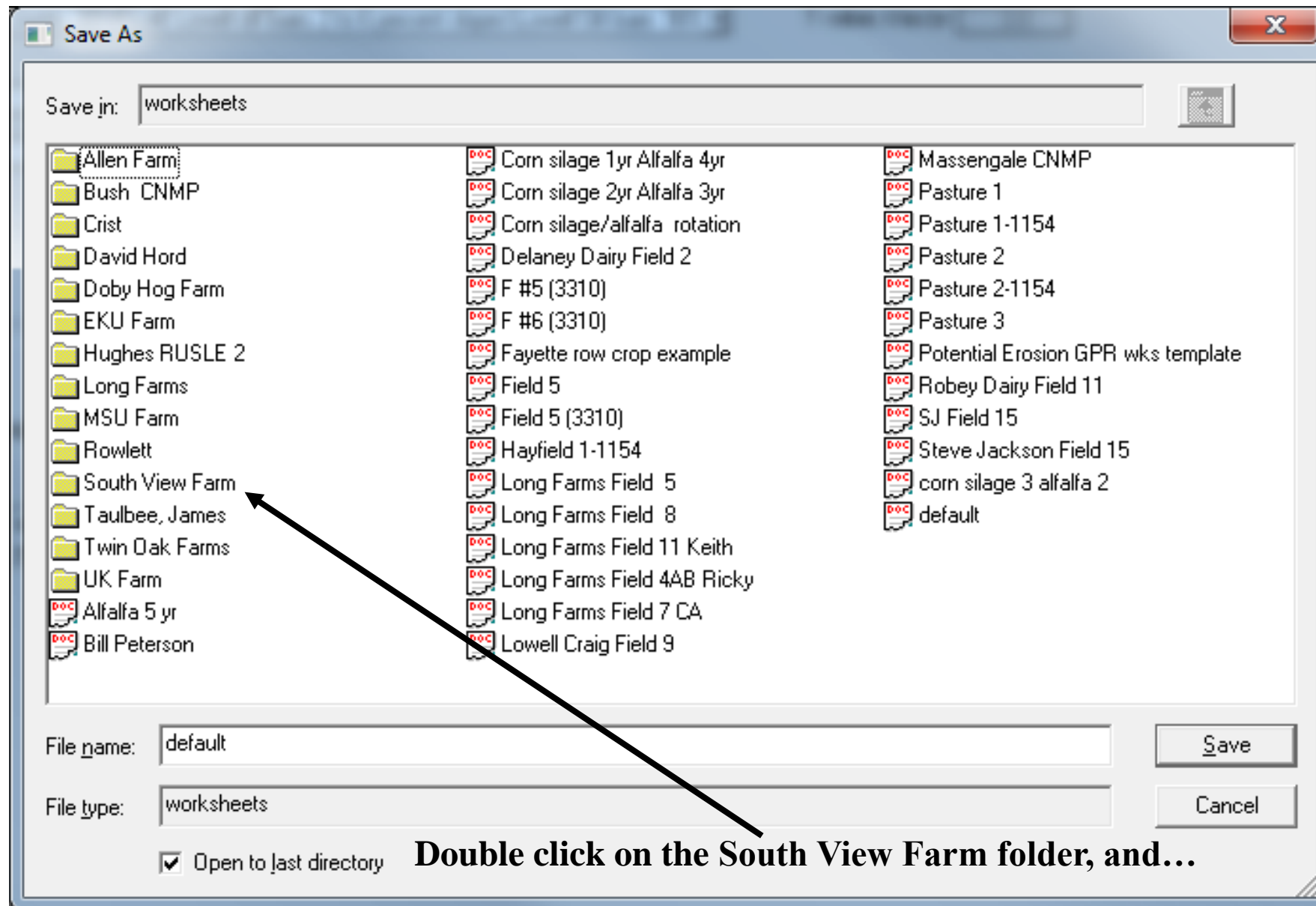
Slope Topography			Seg length (along slope), ft
Segment		Steepness, %	
+	-		
1		5.0	200

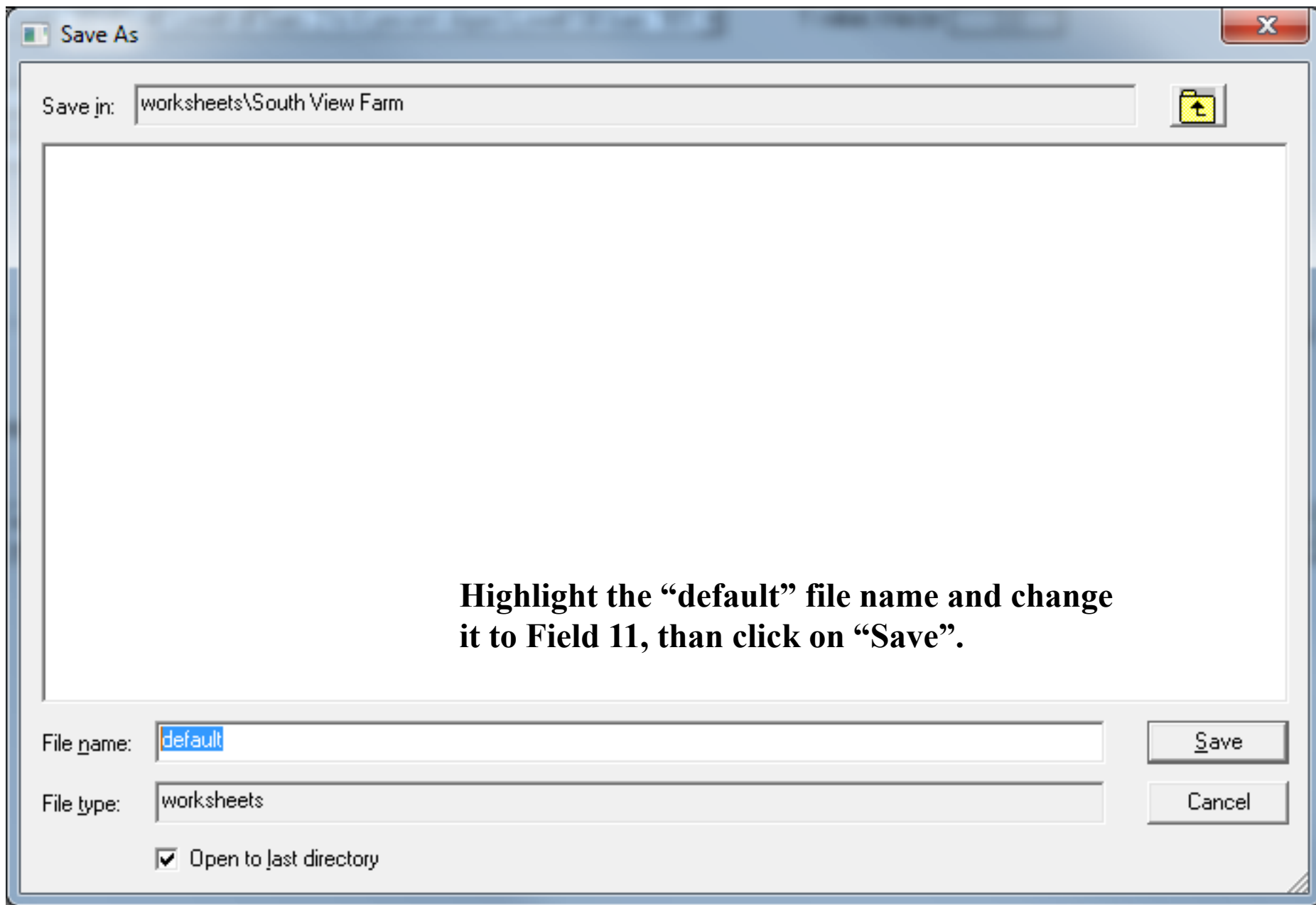
Management alternative table

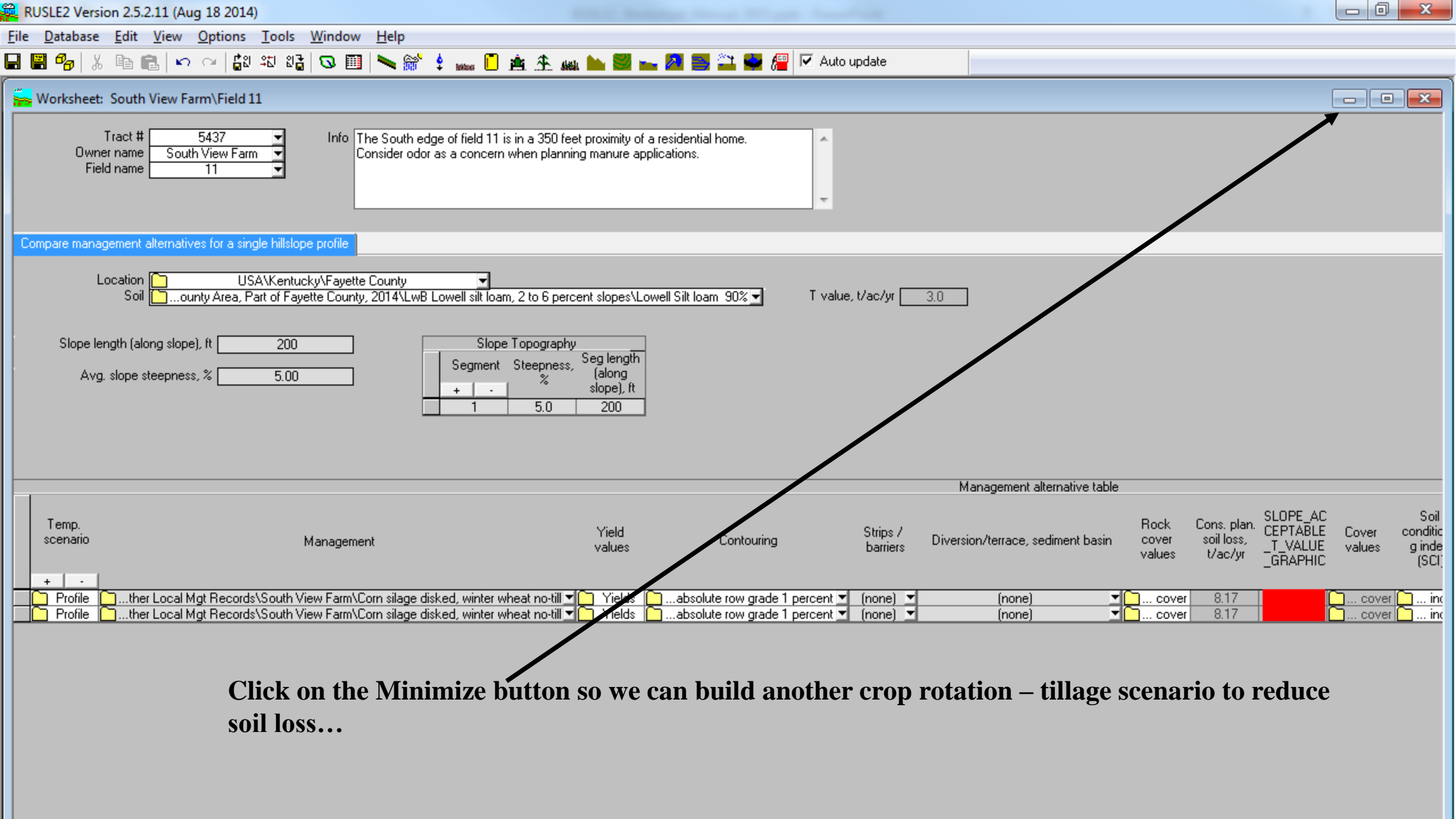
Temp. scenario	Management	Yield values	Contouring	Strips / barriers	Diversion/terrace, sediment basin	Rock cover values	Cons. plan. soil loss, t/ac/yr	SLOPE_ACCEPTABLE_T_VALUE_GRAPHIC	Cover values	Soil conditioning index (SCI)
<div><div>+</div><div>-</div></div>										
<div><div>Profile</div><div>...</div></div>	...ther Local Mgt Records\South View Farm\Corn silage disked, winter wheat no-till	<div><div>Yields</div><div>...</div></div>	...absolute row grade 1 percent	(none)	(none)	<div><div>... cover</div></div>	8.17		<div><div>... cover</div></div>	<div><div>... inc</div></div>
<div><div>Profile</div><div>...</div></div>	...ther Local Mgt Records\South View Farm\Corn silage disked, winter wheat no-till	<div><div>Yields</div><div>...</div></div>	...absolute row grade 1 percent	(none)	(none)	<div><div>... cover</div></div>	8.17		<div><div>... cover</div></div>	<div><div>... inc</div></div>

**Click on the + button to create a second scenario. We better save this Worksheet before building a different crop rotation/tillage file to lower the predicted soil loss.  
Click on the “File” tab above, and select “Save As...”**

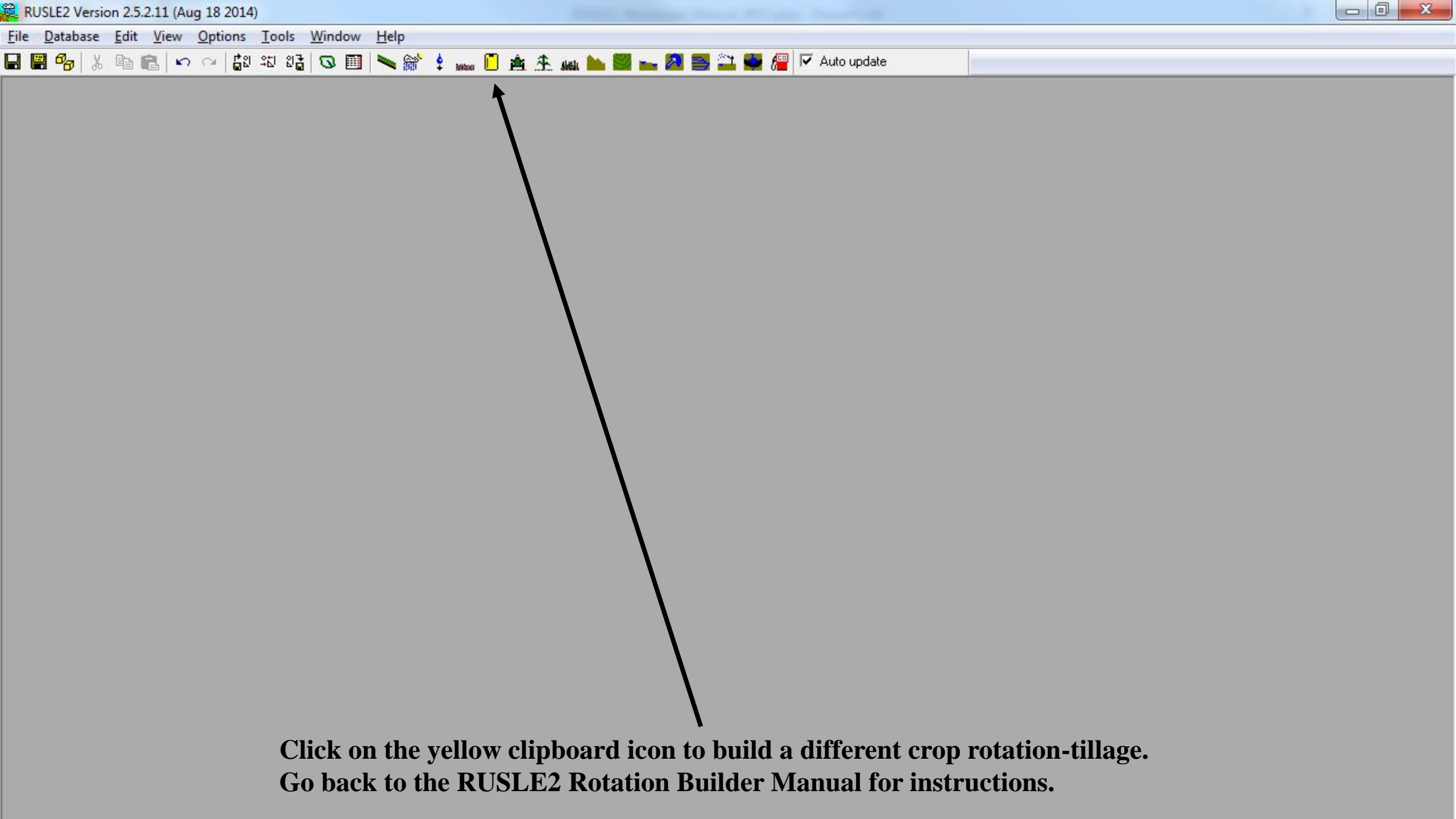








Click on the Minimize button so we can build another crop rotation – tillage scenario to reduce soil loss...



**Click on the yellow clipboard icon to build a different crop rotation-tillage.  
Go back to the RUSLE2 Rotation Builder Manual for instructions.**

Management: CMZ 63\c.Other Local Mgt Records\South View Farm\Corn silage no-till, Wheat haylage no-till

Graphic ☐ Rel. row grade, % 100

Add to this management to make new one

View/edit rotation builder used to make this management

Irrigation system

Long-term natural rough., mm 6.0

Normally used as a rotation? Yes

Duration, yr 1

Fuel for all operations

Base equiv. diesel use, gal/ac 4.11

Base energy use, BTU/ac 570000

Base fuel cost, US\$/ac 14.39

(MAN\_STIR) 6.7 (AVG\_ANNUAL\_MAN\_ 6.7)

MAN\_OP\_VEG\_CROP\_YEAR\_EN ...\_START\_SET\_CHOICE\_USER

(MAN_CR OP_YEAR	(MAN_CR OP_YEAR	MAN_CROP_YEAR_CROP_NAME	MAN_CRO P_YEAR_S	MAN_CRO P_YEAR_E
1				

Operations Info

Management Operations										
Date, m/d/y	MAN_OP_VEG_CRO_P_YEAR_E	ND_STAR_T	Operation	Vegetation	Yield (# harv. units), U_NUM_P_ACRE	Type of cover material	Cover matl add/remov e, lb/ac	Cover from addition, %	Standing res. added by op. desc., lb/ac	Fuel used this operation
5/2/2	No		Fert applic. surface broadcast							Local\Diesel
5/3/2	No		Sprayer, pre-emergence							Local\Diesel
5/5/2	No		Planter, double disk opnr	Corn, silage	22.0					Local\Diesel
5/18/2	No		Sprayer, post emergence			weeds; 0-3 mo	100	5.8		Local\Diesel
5/20/2	No		Fert applic. surface broadcast							Local\Diesel
5/31/2	No		Sprayer, insecticide post emergence							Local\Diesel
8/15/2	No		Harvest, silage				740	24	770	Local\Diesel
8/16/2	No		Begin weed growth	Weeds, less than 3 mo growth	500					Local\Diesel
10/23/2	No		Sprayer, kill crop				21	1.2	390	Local\Diesel
10/24/2	No		Fert applic. surface broadcast							Local\Diesel
10/25/2	No		Sprayer, pre-emergence							Local\Diesel
11/1/2	No		Drill or air seeder single disk openers 7-10 in spac.	Wheat, winter silage S.E.	14.0					Local\Diesel
2/15/3	No		Fert applic. surface broadcast							Local\Diesel
3/15/3	No		Sprayer, insecticide post emergence							Local\Diesel
5/1/3	No		Harvest, silage				400	21	420	Local\Diesel

I modified the existing crop rotation making it a full no-till operation and saved it in the South View Farm folder.



RUSLE2 Version 2.5.2.11 (Aug 18 2014) - [Worksheet: South View Farm\Field 11]

File Database Edit View Options Tools Window Help

Tract # 5437  
 Owner name South View Farm  
 Field name 11

Info The South edge of field 11 is in a 350 feet proximity of a residential home. Consider odor as a concern when planning manure applications.

Compare management alternatives for a single hillslope profile

Location USA\Kentucky\Fayette County  
 Soil ...ounty Area, Part of Fayette County, 2014\LwB Lowell silt loam, 2 to 6 percent slopes\Lowell Silt loam 90%  
 T value, t/ac/yr 3.0

Slope length (along slope), ft 200  
 Avg. slope steepness, % 5.00

Slope Topography			
Segment		Steepness, %	Seg length (along slope), ft
+	-		
1		5.0	200

Management alternative table										
Temp. scenario	Management	Yield values	Contouring	Strips / barriers	Diversion/terrace, sediment basin	Rock cover values	Cons. plan. soil loss, t/ac/yr	SLOPE_ACCEPTABLE_T_VALUE_GRAPHIC	Cover values	Soil conditioning index (SCI)
+	-									
Profile	...ther Local Mgt Records\South View Farm\Corn silage disked, winter wheat no-till	Yields	...absolute row grade 1 percent	(none)	(none)	... cover	8.17		... cover	... index
Profile	...ther Local Mgt Records\South View Farm\Corn silage disked, winter wheat no-till	Yields	...absolute row grade 1 percent	(none)	(none)	... cover	8.17		... cover	... index
<div> <div> <div>EKU Farm</div> <div>Fayette CNMP</div> <div>kIngenfus</div> <div>Long Farms</div> <div>mmp_calc</div> <div>MSU Farm</div> <div>South View Farm</div> <div> <div>Corn silage disked, winter wheat no-till</div> <div>Corn silage no-till, Wheat haylage no-till</div> </div> <div>Steve Jackson</div> </div> </div>										

Click on the down-arrow next to the lower management option and change this rotation to the new full no-till file...

RUSLE2 Version 2.5.2.11 (Aug 18 2014) - [Worksheet: South View Farm\Field 11\*]

File Database Edit View Options Tools Window Help

Tract # 5437  
 Owner name South View Farm  
 Field name 11

Info The South edge of field 11 is in a 350 feet proximity of a residential home. Consider odor as a concern when planning manure applications.

Compare management alternatives for a single hillslope profile

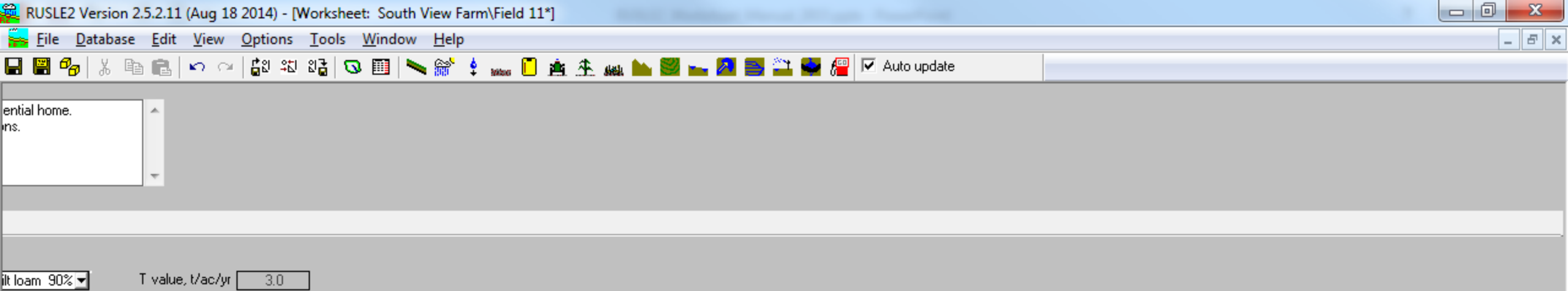
Location USA\Kentucky\Fayette County  
 Soil ...ounty Area, Part of Fayette County, 2014\LwB Lowell silt loam, 2 to 6 percent slopes\Lowell Silt loam 90%  
 T value, t/ac/yr 3.0

Slope length (along slope), ft 200  
 Avg. slope steepness, % 5.00

Slope Topography			
Segment		Steepness, %	Seg length (along slope), ft
+	-		
1		5.0	200

Management alternative table										
Temp. scenario	Management	Yield values	Contouring	Strips / barriers	Diversion/terrace, sediment basin	Rock cover values	Cons. plan. soil loss, t/ac/yr	SLOPE_ACCEPTABLE_T_VALUE_GRAPHIC	Cover values	Soil conditioning index (SCI)
Profile	...ther Local Mgt Records\South View Farm\Corn silage disked, winter wheat no-till	Yields	...absolute row grade 1 percent	(none)	(none)	... cover	8.17		... cover	... index
Profile	...er Local Mgt Records\South View Farm\Corn silage no-till, Wheat haylage no-till	Yields	...absolute row grade 1 percent	(none)	(none)	... cover	2.76		... cover	... index

The soil loss is below “T” with the full no-till alternative.



Management alternative table														
Contouring	Strips / barriers	Diversion/terrace, sediment basin	Rock cover values	Cons. plan. soil loss, t/ac/yr	SLOPE_AC CEPTABLE T_VALUE _GRAPHIC	Cover values	Soil conditionin g index (SCI)	Soil conditionin g index (SCI)	SLOPE_AC CEPTABLE _SCI_GRA PHIC	STIR value	Wind & irrigation-in duced erosion for SCI, t/ac/yr	(WORK_A LT_SLOPE _SLOPE_E VENT_RU NOFF), U_IN_P_Y	Description	Show in summary?
bsolute row grade 1 percent ▾	(none) ▾	(none) ▾	... cover	8.17		... cover	... index	-0.43		54.8	0	9.1	Benchmark condition. ▾	Yes
bsolute row grade 1 percent ▾	(none) ▾	(none) ▾	... cover	2.76		... cover	... index	0.23		6.68	0	8.8	Alternative #1 Full no-till. ▾	Yes

**Scroll to the far right to see the “Description” window. Type in the benchmark condition for the top row and the Alternative #1 Full no-till for the lower row.**

**You can create several different alternatives to guide the decision maker for the best solution for his/her operation. Don’t forget: we are not the decision makers! The landowner/operator is!**

RUSLE2 Version 2.5.2.11 (Aug 18 2014) - [Worksheet: South View Farm\Field 11\*]

File Database Edit View Options Tools Window Help

Tract # 5437  
Owner name South View Farm  
Field name 11

Info The South edge of field 11 is in a 350 feet proximity of a residential home. Consider odor as a concern when planning manure applications.

Compare management alternatives for a single hillslope profile

Location USA\Kentucky\Fayette County  
Soil ...ounty Area, Part of Fayette County, 2014\LwB Lowell silt loam, 2 to 6 percent slopes\Lowell Silt loam 90%  
T value, t/ac/yr 3.0

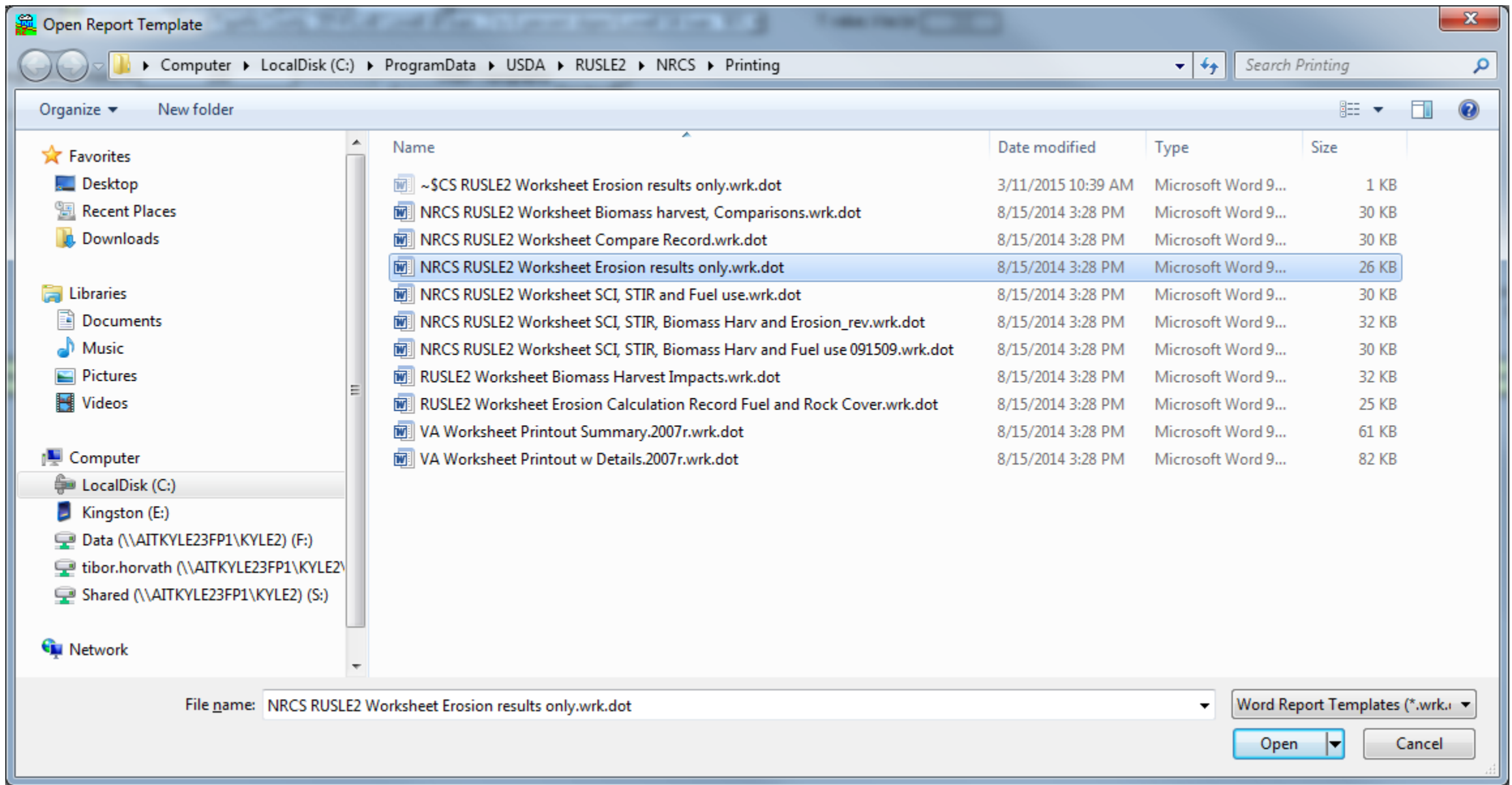
Slope length (along slope), ft 200  
Avg. slope steepness, % 5.00

Segment	Steepness, %	Seg length (along slope), ft
1	5.0	200

Management alternative table

Temp. scenario	Management	Yield values	Contouring	Strips / barriers	Diversion/terrace, sediment basin	Rock cover values	Cons. plan. soil loss, t/ac/yr	SLOPE_ACCEPTABLE_T_VALUE_GRAPHIC	Cover values	Soil conditioning index (SCI)
Profile	...ther Local Mgt Records\South View Farm\Corn silage disked, winter wheat no-till	Yields	...absolute row grade 1 percent	(none)	(none)	... cover	8.17		... cover	... index
Profile	...er Local Mgt Records\South View Farm\Corn silage no-till, Wheat haylage no-till	Yields	...absolute row grade 1 percent	(none)	(none)	... cover	2.76		... cover	... index

Save the worksheet by clicking on the “Save” icon.  
To print out this worksheet click on the “File” tab on top and select “Print Report...”



**There are many printing templates available. For our worksheet I recommend the NRCS RUSLE2 Worksheet Erosion results only.wrk.dot template...**

## RUSLE2 Worksheet Erosion Calculation Record

Info: The South edge of field 11 is in a 350 feet proximity of a residential home.  
Consider odor as a concern when planning manure applications.

### Inputs:

Owner name	Location	--
South View Farm, Field 11	USA\Kentucky\Fayette County	/

Location	Soil	T value	Slope length (horiz)	Avg. slope steepness, %
USA\Kentucky\Fayette County	Fayette County Area, Part of Fayette County, 2014\WB Lowell silt loam, 2 to 6 percent slopes\Lowell Silt loam 90%	3.0	200	5.00

### Outputs:

Management	Description	Contouring	Strips / barriers	Diversion/terrace, sediment basin	Soil loss erod. portion, t/ac/yr	Soil detachment, t/ac/yr	Cons. plan. soil loss, t/ac/yr	Sed. delivery, t/ac/yr
CMZ 63\c Other Local Mgt Records\South View Farm\Corn silage disked, winter wheat no-till	Benchmark condition.	b. absolute row grade 1 percent	(none)	(none)	8.17	8.17	8.17	8.17
CMZ 63\c Other Local Mgt Records\South View Farm\Corn silage no-till, Wheat haylage no-till	Alternative #1 Full no-till.	b. absolute row grade 1 percent	(none)	(none)	2.76	2.76	2.76	2.76

**You can save this file or print it for the CNMP hard copy.**



**This would conclude the RUSLE2 Worksheet Manual.**

**For more info please contact Tibor Horvath at:**

**859-224-7413 or [Tibor.Horvath@ky.usda.gov](mailto:Tibor.Horvath@ky.usda.gov)**

***I give you Soil  
Health!***

